

We claim:

1. A method for inhibiting proliferation and survival of pre-cancerous and cancerous cells comprising the steps of:  
selecting a composition containing 2-methoxyestradiol; and  
5 administering said composition to a cellular aggregation in which is identified suspected pre-cancerous or cancer cells.
2. The method of Claim 1 wherein said suspected pre-cancerous or cancer cells are related to human prostate cancer.  
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3. The method of Claim 1 wherein said suspected pre-cancerous or cancer cells are related to human nervous system cancer.
4. The method of Claim 1 wherein said suspected pre-cancerous or cancer  
15 cells are related to human skin cancer.
5. A method for inhibiting proliferation and survival of pre-cancerous and cancerous cells comprising the steps of:  
selecting a composition consisting substantially of one or more of 2-methoxy  
20 estradiol, 2-ethoxyestradiol, 2-butoxyestradiol, 17- $\alpha$ -ethynylestradiol with methoxy group at position 2, 17- $\alpha$ -ethynylestradiol with butoxy group at position 2, 17- $\alpha$ -ethynyl-9- $\alpha$ -fluoroestradiol with methoxy group at position 2; and 17- $\alpha$ -ethynyl-9- $\alpha$ -fluoroestradiol with butoxy group at position 2.

administering said composition to a cellular aggregation in which is identified  
suspected said pre-cancerous or cancerous cells.

6. The method of Claim 5 wherein said suspected pre-cancerous or cancerous cells  
5 are prostatic cancer cells.
7. A composition for application to cellular aggregation containing pre-cancerous or  
cancerous cells consisting in active constituents substantially of one or more  
agents chosen from a groups consisting of 2-methoxyestradiol, 2-ethoxyestradiol, 2-  
10 butoxyestradiol, 17- $\alpha$ -ethynylestradiol with methoxy group at position 2, 17- $\alpha$ -  
ethynylestradiol with butoxy group at position 2, 17- $\alpha$ -ethynyl-9- $\alpha$ -fluoroestradiol  
with methoxy group at position 2; and 17- $\alpha$ -ethynyl-9- $\alpha$ -fluoroestradiol with  
butoxy group at position 2.
- 15 8. The composition of Claim 7 wherein said pre-cancerous or cancerous cells are  
related to prostate cancer.
9. The use of compositions useful in the inhibition of pre-cancerous or cancerous cell  
proliferation and cell survival selected from a group consisting essentially of:
- 20 the 2-ethyl-17- $\beta$ -estradiol molecules identified as analogues 20-22 in Figure 8,  
specifically excluding any claim to 2-methoxyestradiol;  
the 17- $\alpha$ -ethynyl molecules identified as analogues 23-26 in Figure 8;  
the 17- $\alpha$ -ethyl molecules identified as analogues 27-30 in Figure 8;

the 2,3-methylenedioxy molecules identified as analogues 31, 32, and 33 in Figure 9;

the 2-alkoxy substituted analogues of estrone molecules identified as analogues 8-10 in Figure 6;

5 the 2-ethyl substituted molecule identified as analogue 14 in Figure 6; and  
the 2,3-methylenedioxyestrone molecule identified as analogue 18 in Figure 7.

10. The method of claim 9 wherein said pre-cancerous or cancerous cells are  
10 related to brain cancer.

11. The method of claim 9 wherein said pre-cancerous or cancerous cells are related to prostate cancer.

12. The method of claim 9 wherein said pre-cancerous or cancerous cells are  
15 related to skin cancer.

13. The method of claim 9 wherein said pre-cancerous or cancerous cells are related to lung cancer.

14. The method of claim 9 wherein said pre-cancerous or cancerous cells are  
20 related to colon cancer.

15. A method for inhibiting pre-cancerous or cancerous cell proliferation comprising the steps of:

- selecting a composition from the group consisting of the 2-ethyl-17- $\beta$ -estradiol molecules identified as analogues 20-22 in Figure 8, specifically excluding any claim to 2-methyloxyestradiol, the 17- $\alpha$ -ethynyl molecules identified as analogues 23-26 in Figure 8, the 17- $\alpha$ -ethyl molecules identified as analogues 27-30 in Figure 8, the 2,3-methylenedioxy molecules identified as analogues 31, 32, and 33 in Figure 9, the 2-alkoxy substituted analogues of estrone molecules identified as analogues 8-10 in Figure 6, the 2-ethyl substituted molecule identified as analogue 14 in Figure 6, or the 2,3-methylenedio-xyestrone molecule identified as analogue 18 in Figure 7;
- and
- administering said composition to cells in which is identified suspected pre-cancerous or cancer cells.
16. The method of claim 15 wherein said suspected pre-cancerous or cancerous cells are related to cancers of the nervous system.
- 15 17. The method of claim 15 wherein said suspected pre-cancerous or cancerous cells are related to prostate cancer.
18. The method of claim 15 wherein said suspected pre-cancerous or cancerous cells are related to pernicious mitosis of skin cells.
- 20 19. The method of claim 15 wherein said suspected pre-cancerous or cancerous cells are related to cancers of the colon.
20. A composition for application to pre-cancerous or cancerous cells consisting in active constituents substantially of one or more agents chosen from the 2-ethyl-17- $\beta$ -

estradiol molecules identified as analogues 20-22 in Figure 8, specifically excluding any claim to 2-methoxyestradiol, the 17- $\alpha$ -ethynyl molecules identified as analogues 23-26 in Figure 8, the 17- $\alpha$ -ethyl molecules identified as analogues 27-30 in Figure 8, the 2,3-methylenedioxy molecules identified as analogues 31, 32, and 33 in Figure 9, the 2-alkoxy substituted analogues of estrone molecules identified as analogues 8-10 in Figure 6, the 2-ethyl substituted molecule identified as analogue 14 in Figure 6, or the 2,3-methylenedioxyestrone molecule identified as analogue 18 in Figure 7.

21. The method of claim 20 wherein said pre-cancerous or cancerous cells are related to brain cancer.

22. The method of claim 20 wherein said pre-cancerous or cancerous cells are related to skin cancer.

23. The method of claim 20 wherein said pre-cancerous or cancerous cells are related to human prostate cancer.

24. A method for preventing the onset of cancer and for preventing the recurrence of cancer comprising the administration of a therapeutic dose to a human recipient of one or more compositions selected from the group consisting of:

2-methoxyestradiol;;

the 2-ethyl-17- $\beta$ -estradiol molecules identified as analogues 20-22 in Figure 8,

specifically excluding any claim to 2-methoxyestradiol;

the 17- $\alpha$ -ethynyl molecules identified as analogues 23-26 in Figure 8;

the 17- $\alpha$ -ethyl molecules identified as analogues 27-30 in Figure 8;  
the 2,3-methylenedioxy molecules identified as analogues 31, 32, and 33 in  
Figure 9;  
the 2-alkoxy substituted analogues of estrone molecules identified as  
analogues 8-10 in Figure 6;  
the 2-ethyl substituted molecule identified as analogue 14 in Figure 6; and  
the 2,3-methylenedioxyestrone molecule identified as analogue 18 in Figure 7.

25. The method of Claim 24 wherein a therapeutic dose of eugenol is  
administered in conjunction with said one or more compositions.
26. The method of Claim 24 wherein said cancer is human prostate cancer.
27. The method of Claim 24 wherein said cancer is human nervous system  
cancer.
28. The method of Claim 24 wherein said cancer is human skin cancer.
29. The method of Claim 24 wherein said cancer is human colon cancer.
30. The method of Claim 25 wherein said cancer is human prostate cancer.
31. The method of Claim 25 wherein said cancer is human nervous system  
cancer.
32. The method of Claim 25 wherein said cancer is human skin cancer.
33. The method of Claim 25 wherein said cancer is human colon cancer.